

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P931226

Luminaire Tested: DFN2DS-SQ4F0-160DS950-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931226
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-SQ4F0-160DS950-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

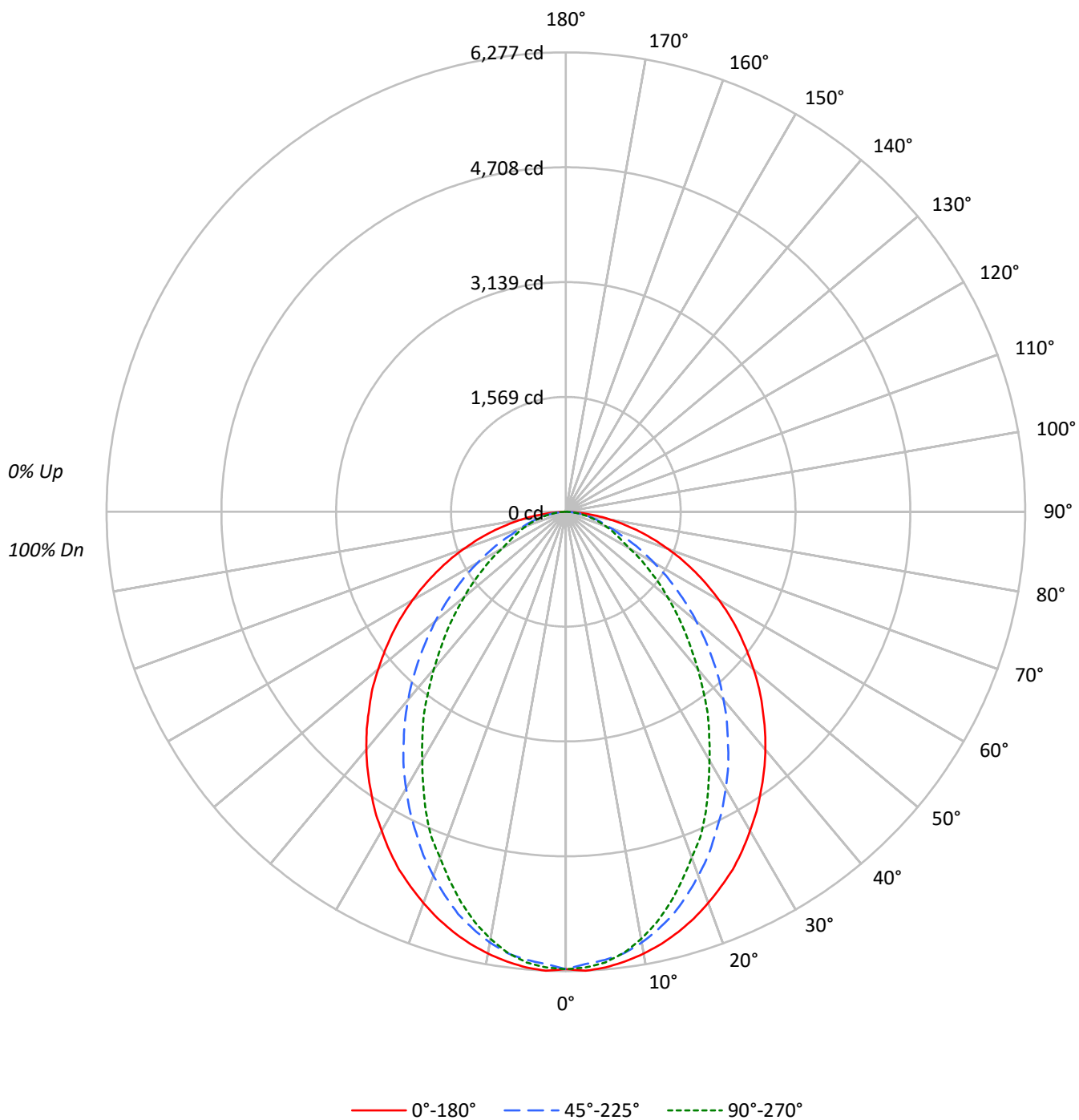
Lumens per Lamp: N/A
Luminaire Lumens: 12852.0 lumens
Efficiency: N/A
Efficacy: 73.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 174.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4385	4385	4385
5°	4402	4330	4354
10°	4368	4259	4223
15°	4318	4133	4014
20°	4248	3952	3754
25°	4177	3748	3503
30°	4078	3537	3180
35°	3982	3309	2897
40°	3885	3072	2569
45°	3771	2806	2273
50°	3655	2537	1982
55°	3535	2248	1702
60°	3397	1944	1413
65°	3240	1634	1286
70°	3051	1345	1183
75°	2821	1226	1104
80°	2490	1096	1006
85°	1956	865	865

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3771 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	585.7	4.6
10°-20°	1607.8	12.5
20°-30°	2257.3	17.6
30°-40°	2460.6	19.1
40°-50°	2261.5	17.6
50°-60°	1776.1	13.8
60°-70°	1156.1	9.0
70°-80°	595.1	4.6
80°-90°	151.9	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	4450.7	34.6
0°-40°	6911.3	53.8
0°-60°	10948.9	85.2
0°-90°	12852.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12852.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6249	6249	6249	6249	6249	
5°	6249	6221	6147	6198	6181	593
15°	5944	5881	5689	5582	5525	1675
25°	5395	5214	4841	4609	4524	2481
35°	4649	4360	3863	3506	3382	2910
45°	3800	3421	2828	2426	2290	2935
55°	2890	2449	1838	1499	1391	2582
65°	1951	1493	984	792	775	1934
75°	1040	644	452	413	407	1100
85°	243	124	107	107	107	291
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6249.1	6249.1	6249.1	6249.1	6249.1
2.5°	6277.3	6249.1	6186.6	6243.7	6232.3
5°	6249.1	6220.8	6147.0	6198.1	6181.2
7.5°	6198.1	6164.4	6085.2	6107.4	6079.3
10°	6130.3	6090.7	5977.9	5960.5	5926.9
12.5°	6045.6	5994.7	5841.7	5808.1	5745.7
15°	5943.7	5881.3	5689.3	5581.8	5525.4
17.5°	5824.9	5734.3	5496.7	5372.4	5281.9
20°	5689.3	5575.9	5293.2	5152.2	5027.5
22.5°	5542.2	5412.0	5083.8	4891.9	4807.2
25°	5395.3	5214.0	4840.9	4609.2	4524.1
27.5°	5220.1	5027.5	4614.6	4348.9	4218.7
30°	5033.4	4818.1	4365.6	4077.7	3924.7
32.5°	4852.3	4591.8	4128.6	3789.1	3647.4
35°	4648.8	4360.2	3862.9	3506.4	3381.7
37.5°	4450.9	4139.5	3613.9	3223.2	3082.2
40°	4241.4	3902.5	3353.4	2952.0	2805.0
42.5°	4026.6	3664.8	3093.6	2674.8	2533.8
45°	3800.4	3421.3	2827.8	2425.8	2290.2
47.5°	3585.6	3184.3	2573.4	2171.4	2047.2
50°	3348.0	2946.6	2324.4	1933.8	1815.6
52.5°	3115.9	2691.6	2086.8	1713.7	1606.2
55°	2889.6	2448.6	1837.8	1498.8	1391.4
57.5°	2658.0	2205.6	1617.7	1300.8	1210.2
60°	2420.4	1968.1	1385.4	1097.4	1006.8
62.5°	2188.8	1736.4	1187.4	916.2	871.2
65°	1951.2	1492.8	984.0	792.0	774.6
67.5°	1725.0	1266.6	792.0	695.4	678.6
70°	1487.4	1046.4	655.8	599.4	576.6
72.5°	1261.2	842.4	548.4	503.4	492.0
75°	1040.4	644.4	452.4	412.8	407.4
77.5°	820.2	457.8	356.4	333.6	322.2
80°	616.2	328.2	271.2	249.0	249.0
82.5°	429.6	220.8	186.6	175.2	175.2
85°	243.0	124.2	107.4	107.4	107.4
87.5°	90.6	45.0	45.0	39.6	39.6
90°	0.0	0.0	0.0	0.0	0.0

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	16.37	17.89	16.74	18.21	18.52	12.33	13.85	12.70	14.17	14.48
	3H	18.14	19.50	18.51	19.83	20.19	13.60	14.96	13.97	15.29	15.65
	4H	18.80	20.08	19.20	20.43	20.81	14.10	15.38	14.50	15.73	16.11
	6H	19.29	20.47	19.70	20.84	21.23	14.48	15.66	14.89	16.03	16.42
	8H	19.46	20.58	19.88	20.97	21.37	14.60	15.73	15.03	16.12	16.52
	12H	19.56	20.64	19.99	21.02	21.45	14.68	15.76	15.11	16.14	16.57
4H	2H	16.47	17.75	16.87	18.10	18.48	13.03	14.31	13.43	14.66	15.03
	3H	18.41	19.47	18.82	19.87	20.27	14.47	15.53	14.88	15.93	16.33
	4H	19.16	20.11	19.59	20.53	20.97	15.07	16.03	15.50	16.44	16.88
	6H	19.75	20.58	20.21	21.02	21.48	15.56	16.39	16.01	16.83	17.29
	8H	19.96	20.74	20.43	21.18	21.65	15.72	16.50	16.18	16.94	17.41
	12H	20.12	20.81	20.60	21.29	21.76	15.84	16.53	16.32	17.01	17.48
8H	4H	19.18	19.96	19.64	20.40	20.87	15.42	16.20	15.89	16.64	17.11
	6H	19.82	20.46	20.32	20.95	21.43	16.01	16.65	16.51	17.14	17.62
	8H	20.07	20.65	20.58	21.16	21.64	16.23	16.81	16.74	17.32	17.80
	12H	20.27	20.78	20.78	21.28	21.84	16.41	16.92	16.92	17.41	17.98
12H	4H	19.17	19.86	19.65	20.34	20.81	15.47	16.16	15.95	16.64	17.11
	6H	19.80	20.38	20.31	20.89	21.37	16.07	16.65	16.59	17.16	17.65
	8H	20.08	20.59	20.59	21.09	21.65	16.35	16.86	16.86	17.35	17.91